IN THE CLAIMS

1. (currently amended) A system for controlling and monitoring a power distribution system, comprising:

a connection to a ~~high-voltage~~ power line within the power distribution system;

a switchgear housing unit connected to the power distribution system and including a switchgear mechanism for controlling the connection; ~~and~~

electronic controls for monitoring and controlling the switchgear mechanism;

wherein the electronic controls are embedded within the switchgear housing unit to form a single, self-contained unit; and

wherein the electronic controls include a digital interface configured to communicate control information for controlling the switchgear mechanism from the self-contained unit to another location using a single control cable.

2. (original) The system of claim 1 wherein the electronic controls include an analog-to-digital conversion component that digitizes voltage and current waveforms within the switchgear housing unit.

3. (currently amended) The system of claim 2 wherein the ~~electronic controls include a~~ digital interface ~~that~~ receives input from the analog-to-digital conversion component to enable an operator to interface with the electronic controls.

4. (original) The system of claim 2 further comprising:

a separate enclosure; and

a digital interface that is housed in the separate enclosure and that is connected to the electronic controls embedded within the switchgear housing unit using a multi-conductor cable

that provides electronic control signals to enable an operator to interface with the electronic controls.

5. (original) The system of claim 1 wherein the electronic controls include an energy storage component embedded within the switchgear housing unit to provide backup power, the system further comprising a backup power element in the separate enclosure to extend a backup power time to operate the electronic controls and the switchgear mechanism during a power interruption.

6. (original) The system of claim 1 wherein the electronic controls include a programming port to enable an operator to program the electronic controls.

7. (previously presented) The system of claim 1 wherein the electronic controls include:

a current sensing device to measure current in the power distribution system;

a voltage sensing device to measure voltage in the power distribution system;

an analog-to-digital converter to digitize the measured current and voltage;

a processor device to process the digitized current and voltage measurements; and

a memory device to store the digitized current and voltage measurements.

8. (original) The system of claim 1 wherein the switchgear housing unit and the embedded electronic controls are physically located near a top of a utility pole.

9. (original) The system of claim 1 wherein the switchgear housing unit includes a manual operation device to operate the switchgear mechanism manually.

10. (original) The system of claim 1 wherein the electronic controls include a first communications module and a second communications module to enable remote management of the switchgear mechanism, the first and second communication modules configured differently from one another.

11. (original) The system of claim 1 wherein the switchgear housing unit includes a mechanism housing with one or more attached interrupter modules.

12. (original) The system of claim 11 wherein the interrupter modules include one or more vacuum interrupters.

13. (previously presented) The system of claim 1 wherein the switchgear mechanism is configured to provide fault isolation to the power distribution system.

14. (previously presented) The system of claim 1 wherein the switchgear mechanism is configured to provide switching or tying operations between connections in the power distribution system.

15. (currently amended) A method for controlling and monitoring a power distribution system, the method comprising:

monitoring a connection to a ~~high-voltage~~ power line within the power distribution system using electronic controls embedded within a switchgear housing unit; ~~and~~

controlling the connection to the ~~high-voltage~~ power line within the power distribution system using the electronic controls embedded within the switchgear housing unit;

communicating, via a long range communications device of the electronic controls, with a utility; and

providing, via a short range communications device of the electronic controls, a remote device management functionality through a virtual communications based operator interface.

16. (previously presented) The method as in claim 15 further comprising:

measuring current and voltage of the power distribution system; and

converting the current and voltage measurements to digital current and voltage measurements.

17. (original) The method as in claim 15 further comprising:

providing backup power to the electronic controls using an energy storage module contained within the switchgear housing unit.

18. (currently amended) The method as in claim 15 further comprising remotely operating the electronic controls using ~~a communications module~~ one of the short range and long range communications devices contained within the switchgear housing unit.

19. (original) The method as in claim 15 further comprising manually operating a switchgear mechanism using a manual operation device contained within the switchgear housing unit.

20. (previously presented) The system of claim 1 wherein the switchgear mechanism is configured to open the connection in response to a fault within the power distribution system.

21. (new) A system for controlling and monitoring a power distribution system, comprising:

a connection to a power line within the power distribution system;

a switchgear housing unit mounted to a utility pole at a first location, the housing unit connected to the power distribution system and including a switchgear mechanism for controlling the connection;

electronic controls for monitoring and controlling the switchgear mechanism, the electronic controls being embedded within the switchgear housing unit to form a single, self-contained unit, and the electronic controls including a digital interface;

an enclosure, separately provided from the switchgear housing, mounted at a second location apart from the first location; and

a single control cable establishing a prolonged connection to the embedded electronic controls in the switchgear housing, the single control cable communicating control information

for operating the switchgear mechanism from the embedded electronic controls to the enclosure at the second location.

22. (new) The system of claim 21 wherein the enclosure contains additional electronic controls having a digital interface, the single control cable connecting the digital interface of the embedded electronic controls and the digital interface of the additional electronic controls in the enclosure, the digital interface in the enclosure providing an operator interface with the embedded electronic controls at the first location.

23. (new) The system of claim 21, wherein the first location is an upper portion of the utility pole, and the second location is a lower portion of the utility pole.

24. (new) The system of claim 21, wherein the enclosure includes a backup power element at the second location.

25. (new) The system of claim 21, wherein the electronic controls for monitoring and controlling the switchgear mechanism include a short range communications device and a long range communications device.

26. (new) The system of claim 21, wherein the complete control information includes measured power system current and voltage for each phase of power being monitored, decision criteria for operating the switchgear mechanism, decision criteria for communicating with external devices, energy conversion and energy storage parameters for operating the switchgear mechanism, and control energy and decision criteria for moving a switchgear actuator to operate the switchgear mechanism.

27. (new) The system of claim 1 further comprising:

a separate enclosure; and

a digital interface that is housed in the separate enclosure and that is connected to the electronic controls embedded within the switchgear housing unit using the single cable.

28. (new) The system of claim 4 wherein the electronic controls include an energy storage component embedded within the switchgear housing unit to provide backup power, the system further comprising a backup power element in the separate enclosure to extend a backup power time to operate the electronic controls and the switchgear mechanism during a power interruption.

29. (new) The system of claim 1 wherein the electronic controls include a first communications module and a second communications module to enable remote management of the switchgear mechanism, the first and second communication modules configured differently from one another.

30. (new) The method as in claim 17 further comprising:

extending a backup power time of the energy storage module with a separate backup power element located at another location from the switchgear.